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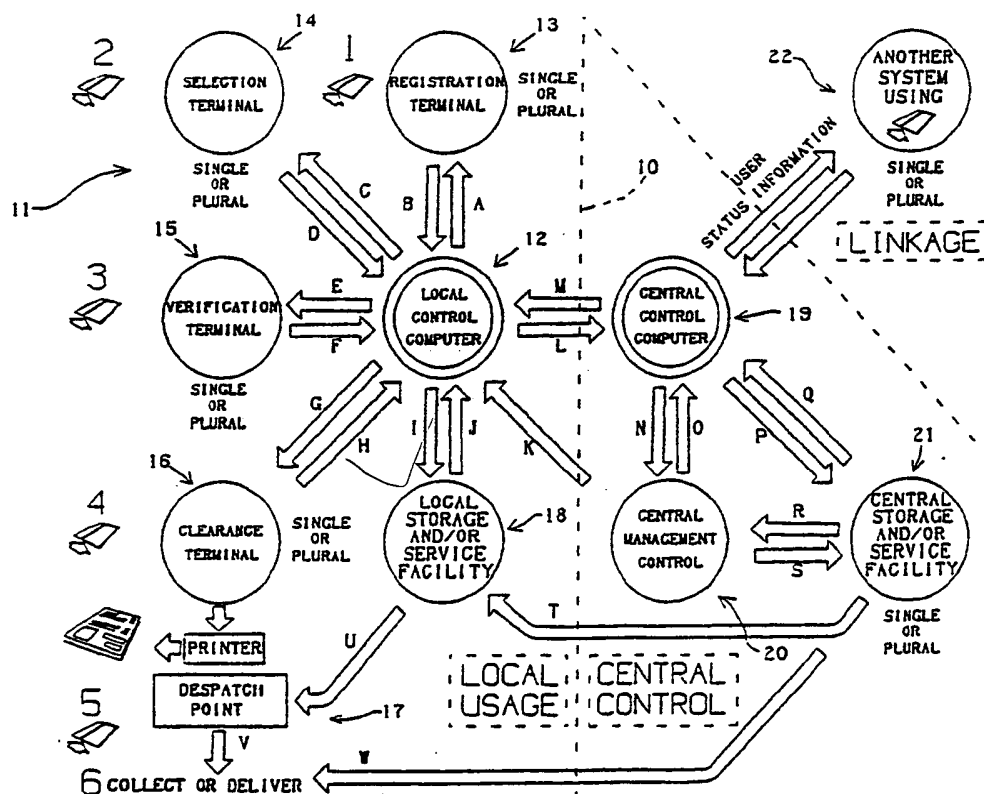
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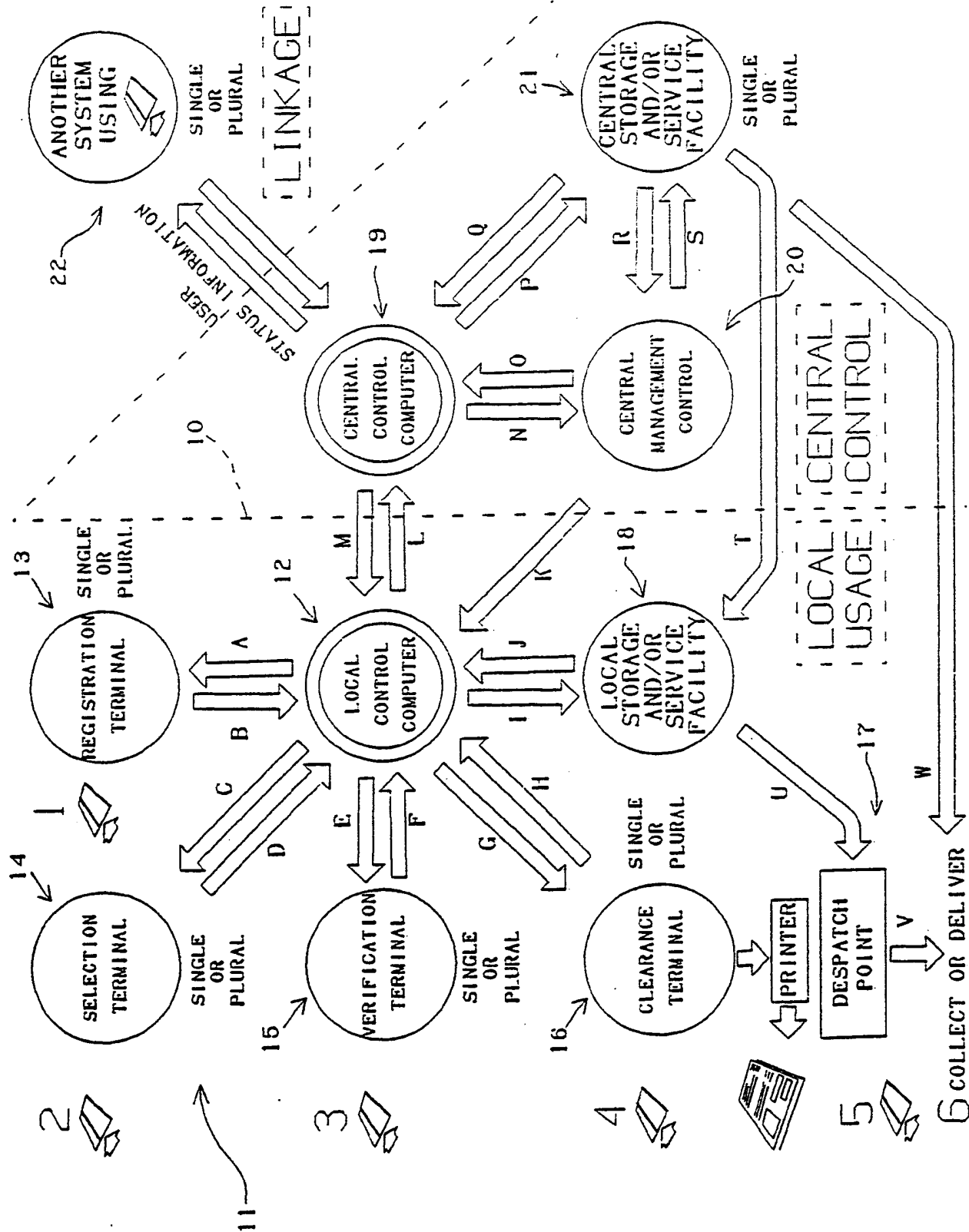
(56) Documents cited  
 EP 0423035 A1 EP 0380377 A1 EP 0309318 A1  
 US 4893705 A US 4231458 A

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## (54) Data processing and handling system

(57) A data processing and handling system comprises one or more stations (13, 14, 15, 16, 17) at which machine readable data on a token, preferably a "smart card", allocated to a user may be read and/or updated whereby goods and/or services may be ordered by the user. The stations include a registration terminal (13), one or more selection terminals (14), a verification terminal (15), a clearance terminal (16) and a despatch point (17). Said stations communicate with or through a local control computer (12) which communicates with a central control computer (19).





Title: Data processing and handling system

Description of the Invention

This invention relates to a data processing and handling system, suitable for use primarily but not exclusively in the field of stock control and ordering and/or in the purchase or ordering of goods and/or services.

According to the invention, there is provided a data processing and handling system comprising one or more stations at which machine readable data on a token allocated to a user may be read and/or updated whereby goods and/or services may be ordered by the user.

Preferably said token is a "smart card" incorporating a memory electronic mini-computer chip which may contain electronically readable data as to the identity, status or the like of the user concerned, and which typically is energised, to permit said data to be read or updated, by being inserted into a terminal at such station.

Desirably the system comprises a plurality of such stations and means for communicating data between the stations.

Preferably the system comprises a control computer with or through which said stations communicate.

Preferably the system includes a station, such as for "registration" purposes, for reading the data from the token and passing the data so read to the system to be subsequently called upon as required.

Preferably the system includes one or more stations at which data as to available goods and/or services is provided to the user, and from which data as to goods and/or services selected by the user is communicated to the system, such as to said control computer.

Preferably the system includes a station for "verification" purposes, at which a user may verify and/or amend goods and/or services selected up to that

point together with an indication of the updated token data which will result from that selection.

Preferably the system includes a "clearance" station, at which said selection may be finalised, and desirably at which payment (or the like) for said selection may be arranged.

Preferably the system includes a "despatch" station, at which for example a user may utilise his token to authorise physical release of the selected goods to him.

The system may comprise one or more "local" facilities in communication with a central control facility.

The invention will now be described by way of example with reference to the accompanying drawing, which shows diagrammatically a selected data processing and handling system in accordance with the invention.

The system illustrated is intended to be provided at a sales facility, wholesale or retail, at which a person, hereinafter termed the user, can order goods and either take them away from the sales facility or arrange for their despatch for delivery to another premises. The sales facility may also provide for the ordering by the user of services which he wishes to be performed, for example installation or maintenance services such as in relation to goods ordered or purchased. The illustrated system also provides for transmission of data to and from a central management facility which may control a number of sales facilities, including stock and re-ordering control.

In the drawing, components of a system in accordance with the invention which are provided at a sales facility are shown to the left of the broken line 10 and indicated generally at 11. These components comprise a data processing means in the form of a computer 12 for local control purposes, and a number of terminals (or "stations") 13, 14, 15, 16, 17, 18 whose function and facilities are described hereafter. In general a plurality of terminals 14 may be provided, such as for selection of goods and/or services of respective different types. The terminals 13 to 18 are each in communication with the computer 12

by data links for transmission of data therebetween in both directions as indicated by the arrows A to J. There is also data communication between the terminals 17, 18 as indicated by the arrow U.

To the right of the broken line 10, components of the system for central management control of a number of sales facilities are shown, comprising a central control computer 19, a central management control facility 20 for providing management information (such as for automatic computerised analysis and/or human appraisal or input) and a central storage and/or service facility 21. Data links are provided between these central facilities and the computer 19 and the system components at the sales facility as indicated by arrows M to T. Further data links to a system at another sales facility may be provided as indicated at 22.

The operating facilities with which the terminals and computers are provided will now be described with reference to the use thereof by a user. The user has a personal token or other identifying means which contains machine-readable data as to his status, credit position, identity, and the like, which data is able to be updated. Such a token may be a card bearing magnetic material which is readable and whose magnetic state is able to be altered to change the information it contains, but preferably is a card of the "smart card" type having a memory electronic mini-computer chip inside, and which typically is energised by being inserted into a terminal. Use of such a "smart card" will be assumed hereafter. If the user does not possess his own smart card, he acquires one upon entering the sales facility.

Initially the user attends at registration terminal 13 at which his temporary or permanent smart card is read by a suitable card reader provided at the terminal. The terminal has a display which shows the data read from the smart card. In addition, the terminal 13 communicates with the computer 12 in respect of the data derived from the smart card, so that all the other terminals in the system can recognise the user.

The user's smart card may be updated in any way necessary. The local computer 12 receives any relevant data from the central computer 19, and the registration terminal may display data such as:

- a) current status of the user (financial and in any other respect);
- b) credit facilities available;
- c) special arrangements for items within the system;
- d) any special arrangements on selected items for the user;
- e) accumulated "vouchers" (i.e. reduced purchase cost entitlements) from previous uses;
- f) methods of using "vouchers".

The user then moves to the terminal 14 illustrated which is one of a plurality of such selection terminals 14. The smart card is entered and read at said terminal 14 which thus recognises the user who is then able to select an item or items which he wishes to purchase or a service or services to be performed from a list or other display provided by or on the terminal 14. If necessary, he can obtain from the terminal 14 any further data about the item or items, e.g. its stock status. The computer 12 records the item or items selected by the user.

Next the user visits terminal 15, which is a verification terminal. On entry of the smart card to the verification terminal and recognition of the card, the selections made by the user are displayed and the updated data from the smart card after the selections. The user either verifies the displayed selections or is able to amend them, at which the computer 12 sends data to the terminal 18 which is at a storage or service facility, to enable the selected items to be drawn from stock ready for despatch, or to enable the required services to be organised.

The verification terminal 15 may be provided at a departmental boundary: a number of such terminals would be provided in the sales facility as required.

The user next comes to the terminal 16 which is a clearance terminal, and inserts his smart card which is recognised by the system. The terminal displays data in respect of the following:

- a) total selections made;
- b) totally updated card data (which data can be manipulated before final clearance is requested);
- c) exchange/payment systems which may be displayed, e.g. debit from smart card, debit from credit card, payment by cash or cheque, or barter or exchange.

The user can arrange to recharge his smart card (such as with further monetary value or credit) as appropriate, and can request delivery of any items or performance of a service, and select a delivery address if it is different from his own address.

When clearance for release of goods from the storage facility of the system has been established, the local storage facility 18 is provided with the necessary data enabling release of the selected goods to a despatch point 17.

At this stage, the user can, by a printer provided at the clearance terminal 16, obtain a printout of his selections and the updated status of his smart card.

The user can now proceed to the despatch point 17, and use his smart card upon insertion thereof into a terminal there provided to authorise release and collection of the selected item, which in the interim has been taken from the storage facility, and packed, for him. Alternatively, the user may arrange to have items delivered from another storage facility of the system, or from the manufacturer.

In addition to or as part of the above described system, the various components thereof provide the following facilities and operations:

The computer 12 collates all data from the terminals 13 to 18, and updates the data held at the terminals, as necessary. It provides data to the

terminal at the local storage facility 18, and receives the stock status data and availability of stock at other facilities connected to the system.

The computer 19 services any required number of local control computers such as the computer 12, and may be connected to other similar systems by a network, so that the user is free to use his smart card anywhere he has access to the network.

The central management control facility 20 communicates with the local and central computers 12, 19, and the central storage facility 21, and is able to analyse data to determine trends, provide special arrangements for users, and better control the supply of stock and services.

The central storage and/or service facility 21 receives orders from the central control computer 19 for items or services, and also communicates with the central management control facility 20 as indicated by arrows R, S.

Arrows T, U and W indicate that items may be sent from a central storage facility to a local storage facility, directly from the central storage facility to the despatch point, or directly to the user's premises, and from the local storage facility to the despatch point, collated as required.

If desired, the terminals 14 may be of "touchscreen" type.

Any of the terminals may welcome the user by name, when the card has been entered/inserted.

The user's card and/or the computer(s) 12 and/or 19 may store the users (e.g.) weekly shopping requirements.

The computer(s) 12 and/or 19 may offer selected users discounts or the like, based upon data records of previous purchases.

The smart card itself desirably "stores" the selections, as they are made.

Preferably the terminals 14 provide information as to whether selected goods/services are available.

Although described above in relation to a shopping facility, the invention is also applicable to other stock control and ordering or warehousing systems.



The features disclosed in the foregoing description, or the accompanying drawings, expressed in their specific forms or in the terms or means for performing the desired function, or a method or process for attaining the disclosed result, may, separately or in any combination of such features, be utilised for realising the invention in diverse forms thereof.

CLAIMS

1. A data processing and handling system comprising one or more stations at which machine readable data on a token allocated to a user may be read and/or updated whereby goods and/or services may be ordered by the user.
2. A system according to Claim 1 wherein said token is a card of "smart card" type.
3. A system according to Claim 1 or Claim 2 comprising a plurality of such stations and means for communicating data between the stations.
4. A system according to Claim 3 comprising a control computer with or through which said stations communicate.
5. A system according to any one of the preceding claims including a station, such as for "registration" purposes, for reading the data from the token and passing the data so read to the system to be subsequently called upon as required.
6. A system according to any one of the preceding claims including one or more stations at which data as to available goods and/or services is provided to the user, and from which data as to goods and/or services selected by the user is communicated to the system.
7. A system according to Claim 6 where directly or indirectly dependent upon Claim 3 wherein said communication is to said control computer.
8. A system according to any one of the preceding claims including a station for "verification" purposes, at which a user may verify and/or amend goods

and/or services selected up to that point together with an indication of the updated token data which will result from that selection.

9. A system according to any one of the preceding claims including a "clearance" station, at which said selection may be finalised.

10. A system according to Claim 9 wherein, at said "clearance" station, payment (or the like) for said selection may be arranged.

11. A system according to any one of the preceding claims including a "despatch" station.

12. A system according to Claim 11 wherein, at said "despatch" station, a user may utilise his token to authorise physical release of the selected goods to him.

13. A system according to any one of the preceding claims comprising one or more "local" facilities in communication with a central control facility.

14. A data processing and handling system substantially as hereinbefore described with reference to and/or as illustrated in the accompanying drawing.

15. Any novel feature or novel combination of features described herein and/or illustrated in the accompanying drawing.

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**Patents Act 1977**  
**Examiner's report to the Comptroller under**  
**Section 17 (The Search Report)**

Application number

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**Relevant Technical fields**

(i) UK Cl (Edition K ) G4V (VAK, VAL)

(ii) Int Cl (Edition 5 ) G07F 7/08

**Search Examiner**

G NICHOLLS

**Databases (see over)**

(i) UK Patent Office

(ii) ONLINE DATABASE: WPI

**Date of Search**

12 OCTOBER 1992

Documents considered relevant following a search in respect of claims 1-14

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	EP 0423035 A1 (GEMPLUS) Whole document	1-5, 13
X	EP 0380377 A1 (URBA 2000) Whole document	1-5, 13
X	EP 0309318 A1 (SGS-THOMSON) Whole document	1-7, 11-13
X	US 4893705 (BROWN) Whole document	1, 2, 5, 6, 9-12
X	US 4231458 (LIMONE ET AL) Whole document	1, 2, 9, 10

Category	Identity of document and relevant passages	Relevance to claim(s)

**Categories of documents**

**X:** Document indicating lack of novelty or of inventive step.

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**A:** Document indicating technological background and/or state of the art.

**P:** Document published on or after the declared priority date but before the filing date of the present application.

**E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.

**&:** Member of the same patent family, corresponding document.

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